

Comparison of Plegisol and modified ST Thomas Hospital Cardioplegia Solution in patients undergoing coronary artery bypass surgery

Cardioplegia solutions in coronary artery bypass surgery using cardiopulmonary bypass

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Abstract

Introduction

Coronary artery bypass surgery is recommended for severely stenosed coronary arteries. This procedure can be performed both on or off cardiopulmonary bypass support. The on-pump cardiopulmonary bypass procedure requires cardioplegic solutions for electromechanical quiescence.

Objective- On cardiopulmonary bypass coronary artery bypass surgery requires cardioplegic arrest of the heart. The most widely used solutions are of Plegisol and modified ST Thomas Hospital Cardioplegia Solution and need a detailed study to look for its effectiveness and complications.

Methods- Twenty five each patients underwent on cardiopulmonary bypass coronary artery bypass surgery using Plegisol (Group B) and modified ST Thomas Hospital (Group A) Cardioplegia Solution respectively. Serial assay of coronary sinus troponin T was done along with ventricular functions by transesophageal echocardiography.

Results- Six patients of Group A and 3 patients of Group B needed defibrillation, rest of the patients had spontaneous return of normal sinus activity. There were no significant variation in ejection fraction. Mean pre-op LVOT VTI in Group A was 15.44 +/- 2.49 and mean post-op LVOT VTI was 16.70 +/- 2.49. In Group A mean pre Aortic cross clamp Troponin T levels was 192.12 +/- 145.05 mcg/ml and that in Group B was 169.33 +/- 137.20 mcg/ml. The corresponding values of mean post AXC release Troponin T levels in both the groups were 750.39 +/- 628.45 mcg/ml and 582.69 +/- 433.65 mcg/ml respectively. Similarly, the mean Troponin T levels 30min after aortic cross clamp release in Group A and in group B were 668.06 +/- 677.70 mcg/ml and 407.45 +/- 433.44 mcg/ml respectively.

Conclusion- Both Plegisol and modified ST Thomas Hospital Cardioplegia Solution are almost equal in their myocardial

protective activity in patients undergoing on cardiopulmonary bypass coronary artery bypass surgery.

Key words- Cardioplegia, cardiopulmonary bypass, cardiac enzymes, coronary artery bypass grafting.

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